

AMENDMENTS TO THE CLAIMS

Please amend the Claim as follows. Insertions are shown underlined while deletions are ~~struck through~~.

1 (currently amended): A conductive adhesive consisting of a conductive medium and a binder resin component,

wherein the conductive medium is metal powder, and the binder resin component is a one-component epoxy thermosetting resin composition,

the conductive adhesive is a dispersion in which the metal powder is dispersed in said one-component epoxy thermosetting resin composition with a content ratio of the metal powder to the binder resin component in terms of volume ratio ~~being~~ selected within a range between 34:66 and 55:45,

the metal powder is silver powder or mixed metal powder comprising silver powder mixed with a small quantity of other metal powder,

the ratio of the silver powder to the entire metal powder is selected to be at least within the range of 70% or more in a volume ratio,

said one-component epoxy thermosetting resin composition is a liquid composition essentially consisting of:

- (a) an epoxy resin component,
- (b) a curing agent for the epoxy resin component,
- (c) a cure accelerator,
- (d) ~~additive components~~ an adherence imparting agent, and
- (e) a diluting solvent,

wherein the epoxy resin component is a mixture of two or more multifunctional epoxy compounds being selected from a group consisting of bifunctional epoxy compounds and trifunctional epoxy compounds, in which mixture the ratio of the bifunctional epoxy compound to the trifunctional epoxy compound in ~~the ratio of the number of molecules~~ terms of mole ratio is selected to be within the range between 100:0 and 70:30,

the mixture of two or more multifunctional epoxy compounds is a combination of a multifunctional epoxy compound having a polycyclic aromatic ring skeleton and a multifunctional epoxy compound having a ring structure other than polycyclic aromatic ring in

the skeleton, in which combination the mole ratio of the multifunctional epoxy compound having the polycyclic aromatic ring skeleton to the multifunctional epoxy compound having the other ring structure in the skeleton is selected to be within the range between 95:5 and 70:30,

wherein the mixture of two or more multifunctional epoxy compounds consists of two or more multifunctional epoxy compounds selected from a group consisting of multifunctional epoxy compounds having a bicyclic aromatic condensed ring skeleton, multifunctional epoxy compounds having a tricyclic aromatic condensed ring skeleton, and multifunctional epoxy compound having a ring structure other than polycyclic aromatic condensed ring in the skeleton,

the mixture of two or more multifunctional epoxy compounds comprises at least a bifunctional epoxy compound in the form of dihydroxynaphthalene diglycidyl ether,

the curing agent is a cyclic acid anhydride having an acid anhydride moiety constituting a ring structure in the molecule,

the ~~amount~~amount of the cyclic acid anhydride is selected in a ratio of 0.7 to 1.1 equivalents with respect to the epoxy equivalent of the epoxy resin component,

wherein said cyclic acid anhydride having an acid anhydride moiety constituting a ring structure in the molecule is a cyclic acid anhydride having another hydrocarbon ring skeleton fused with the ring structure constituted by the acid anhydride moiety, in which

said another hydrocarbon ring skeleton that is fused with the ring structure constituted by the acid anhydride moiety is a structure in which two or more chain-form hydrocarbon groups are substituted on the ring, or a polycyclic structure having a bridge-chains on the ring, and

the total number of carbon atoms composing the structure of said another hydrocarbon ring skeleton including the chain-form hydrocarbon groups is selected in the range of 8 to 18, and

the diluting solvent is a solvent having a high boiling point, ~~and~~

wherein the content ratio of the bifunctional epoxy compound in the form of dihydroxynaphthalene diglycidyl ether to other epoxy compounds is 3:1 in the weight ratio

~~an adherence imparting agent is added as the additive component.~~

2 (currently amended): The conductive adhesive as claimed in claim 1~~5~~,
wherein a silane coupling agent is used as the adherence imparting agent to improve the adherence between the resin and a metal surface, which is used to forming junction.

3 (currently amended): The conductive adhesive as claimed in claim 15, wherein the bifunctional epoxy compound in the form of dihydroxynaphthalene diglycidyl ether is 1,6-dihydroxynaphthalene diglycidyl ether.

4 (currently amended): The conductive adhesive as claimed in claim 15, wherein the content ratio of the bifunctional epoxy compound in the form of dihydroxynaphthalene diglycidyl ether to other epoxy compounds is 3:1 in the weight ratio.

5 (currently amended): ~~The~~A conductive adhesive as claimed in claim 1 consisting of a conductive medium and a binder resin component,

wherein the conductive medium is metal powder, and the binder resin component is a one-component epoxy thermosetting resin composition,

the conductive adhesive is a dispersion in which the metal powder is dispersed in said one-component epoxy thermosetting resin composition with a content ratio of the metal powder to the binder resin component in terms of volume ratio being selected within a range between 34:66 and 55:45,

the metal powder is silver powder or mixed metal powder comprising silver powder mixed with a small quantity of other metal powder,

the ratio of the silver powder to the entire metal powder is selected to be at least within the range of 70% or more in a volume ratio,

said one-component epoxy thermosetting resin composition is a liquid composition essentially consisting of:

- (a) an epoxy resin component,
- (b) a curing agent for the epoxy resin component,
- (c) a cure accelerator,
- (d) an adherence imparting agent, and
- (e) a diluting solvent,

wherein the epoxy resin component is a mixture of two or more multifunctional epoxy compounds being selected from a group consisting of bifunctional epoxy compounds and trifunctional epoxy compounds, in which mixture the ratio of the bifunctional epoxy compound to the trifunctional epoxy compound in terms of mole ratio is selected to be within the range between 100:0 and 70:30,

the mixture of two or more multifunctional epoxy compounds is a combination of a multifunctional epoxy compound having a polycyclic aromatic ring skeleton and a multifunctional epoxy compound having a ring structure other than polycyclic aromatic ring in the skeleton, in which combination the mole ratio of the multifunctional epoxy compound having the polycyclic aromatic ring skeleton to the multifunctional epoxy compound having the other ring structure in the skeleton is selected to be within the range between 95:5 and 70:30,

wherein the mixture of two or more multifunctional epoxy compounds consists of two or more multifunctional epoxy compounds selected from a group consisting of multifunctional epoxy compounds having a bicyclic aromatic condensed ring skeleton, multifunctional epoxy compounds having a tricyclic aromatic condensed ring skeleton, and multifunctional epoxy compound having a ring structure other than polycyclic aromatic condensed ring in the skeleton,

the mixture of two or more multifunctional epoxy compounds comprises at least a bifunctional epoxy compound in the form of dihydroxynaphthalene diglycidyl ether,

the curing agent is a cyclic acid anhydride having an acid anhydride moiety constituting a ring structure in the molecule,

the amount of the cyclic acid anhydride is selected in a ratio of 0.7 to 1.1 equivalents with respect to the epoxy equivalent of the epoxy resin component,

wherein said cyclic acid anhydride having an acid anhydride moiety constituting a ring structure in the molecule is a cyclic acid anhydride having another hydrocarbon ring skeleton fused with the ring structure constituted by the acid anhydride moiety, in which

said another hydrocarbon ring skeleton that is fused with the ring structure constituted by the acid anhydride moiety is a structure in which two or more chain-form hydrocarbon groups are substituted on the ring, or a polycyclic structure having a bridge-chain on the ring, and

the total number of carbon atoms composing the structure of said another hydrocarbon ring skeleton including the chain-form hydrocarbon groups is selected in the range of 8 to 18, and

the diluting solvent is a solvent having a high boiling point,

wherein the cure accelerator is an imidazole based cure accelerator, and

the amount of the cure accelerator to be added thereto is selected to be within the range of 0.012 to 0.047 moles of the imidazole based cure accelerator molecules per epoxy equivalent of the epoxy resin compound.

6 (currently amended): The conductive adhesive as claimed in claim 15, wherein the amount of the cyclic acid anhydride is selected in a ratio of 0.8 to 0.95 equivalents with respect to the epoxy equivalent of the epoxy resin component.

7 (canceled)

8 (currently amended): The conductive adhesive as claimed in claim 2, wherein the silane coupling agent is selected from γ -glycidoxypropyl-trimethoxy silane or γ -glycidoxypropyl-methyldiethoxy silane.

9 (currently amended): The conductive adhesive as claimed in claim 15, wherein the metal powder is silver powder or mixed metal powder formed by mixing a small quantity of other metal powder to silver powder, and the ratio of the silver powder to the entire metal powder is selected to be at least within the range of 90% or more in a volume ratio.

10 (currently amended): The conductive adhesive as claimed in claim 15, wherein in the case that said metal powder is mixed metal powder comprising silver powder mixed with a small quantity of other metal powder,

said other metal powder that is mixed with silver powder is chosen from copper powder or zinc powder.

11 (canceled)

12 (currently amended): The conductive adhesive as claimed in claim 15, wherein said multifunctional epoxy compound having other ring structures in the skeleton used in combination is selected from a bifunctional epoxy resin having a bisphenol A skeleton or a multifunctional epoxy resin containing a dicyclopentadiene skeleton.

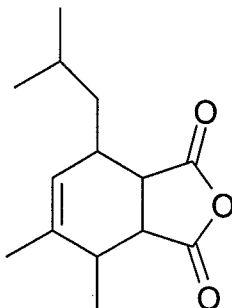
13 (previously presented): The conductive adhesive as claimed in claim 2, wherein the bifunctional epoxy compound in the form of dyhydroxynaphthalene diglycidyl ether is 1,6-dyhydroxynaphthalene diglycidyl ether

14 (previously presented): The conductive adhesive as claimed in claim 4,
wherein the other epoxy compounds is selected from a group consisting of a trihydroxyanthracene triglycidyl ether, a bifunctional epoxy resin having a bisphenol A skeleton and a multifunctional epoxy resin containing a dicyclopentadiene skeleton.

15(previously presented): The conductive adhesive as claimed in claim 15,
wherein said cyclic acid anhydride is selected from the following terpene-
modified maleic anhydrides of Chemical formula 1 or 2:

[Chemical formula 1]

~~Epicure YH 306:~~



[Chemical formula 2]

~~Epicure YH 307:~~

